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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/770,931
Filing Date: January 26, 2001
Appellant(s): SCHNEIDER ET AL.

THOMAS WEAVER
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed June 8, 2004 appealing from the Office action mailed April 8, 2004.

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(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,741,433	MITCHELL ET AL.	04-1998
5,173,526	VIJAYENDRAN ET AL.	12-1992
4,756,844	WALLES ET AL.	08-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 16, 17, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell et al. (US 5741433) ("Mitchell") in view of Vijayendran et al. (US 5173526) ("Vijayendran").

Mitchell teaches a controlled-release supplement coolant additive ("SCA") comprising a core containing the supplement coolant additive active component and a polymeric coating material encapsulating said core. See abstract; col. 3, lines 35 – 60. . The reference teaches that the basic mechanism is that the pellet or table active diffuses through the polymeric coating material when water or water vapor from the outside the membrane wall penetrates through the polymeric coating and dissolve the water-soluble SCA encapsulated therein. See col. 5, lines 36 - 62. The reference further states, "a polymeric coating material having good moisture barrier properties greatly reduces the rate of dissolution of the SCA composition core, thereby providing more constant controlled release." See col. 5, line 63 – col. 6, line 2. The reference also teaches that water-insoluble film-forming polymers are suitable for the coating material. See col. 6, lines 2 – 5. See also the coating polymers tested in Tables 2 and 3 and the discussion in col. 1, line 1 – col. 8, line 25. For the SCA composition, the

reference teaches alkali metal salts, borates, and sulphonates. See col. 3, line 60 – col. 4, line 16; instant claim 17. While the reference teaches the SCA may be in form of solid, granular or particulate form, having size of from about 1/32-3 inches. See col. 4, line 59 – col. 5, line 8. See instant claim 21.

Mitchell fails to teach polyurethane/vinyl hybrid polymer as used in the instant invention.

Vijayendran teaches that the polyurethane/vinyl hybrid polymer recited in the instant claims is a well-known protective coating material. Se col. 1, lines 11 – 42; col. 9, line 9 – col. 11, line 34. The application of the polymer is taught in col. 6, lines 32 – 41. Examiner notes that the limitation following "prepared by" ending at "thereby form a urethane/vinyl hybrid polymer" is a process, which will not be given patentable weight in this product claim. See MPEP § 2113.

Given the general teaching in Mitchell that it is well known in the art to employ water-insoluble film-forming polymers having moisture barrier property to produce an encapsulated pellet or tablet having a water permeable membrane to reduce the rate of the release of the active ingredient, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have looked to the prior art such as Vijayendran for specific water-insoluble film forming polymers to produce a similar product with constant release of the active ingredient in aqueous environment.

Claims 18, 20, 23, 34, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell and Vijayendran as applied to claims 16, 17, and 21 as applied above, and further in view of Walles et al. (US 4756844) ("Walles").

Mitchell and Vijayendran, discussed above, fail to teach using the second materials in the encapsulation as recited in the instant claims.

Walles teaches controlled-release composition having a water permeable membrane comprising submicron particles (anticoalescent agents), which encapsulate a liquid or solid active agent. See abstract. Aqueous colloidal silica is a preferred anticoalescent agent. See col. 5, line 44 – col. 7, line 17. The advantage of using anticoalescent to the membranes include the uniformity of the thickness of the membrane and reducing the amount of the membrane needed, reducing the time to form the membrane and agglomeration of the membrane material. See col. 6, line 55 – col. 7, line 17.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the encapsulated composition in the combined references by adding anticoalescent agents such as silica as motivated by Walles because of the expectation of successfully producing encapsulated materials with uniform membrane thickness, elimination of agglomeration of the membrane materials, and reduced amount and time of the coating material necessary to form the membrane.

Claims 19, 22, 24-28, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell, Vijayendran, and Walles, as applied to claims 16-18, 20, 21, 23, 34, and 35 as applied above, and further in view of Garcia et al. (US 6436540 B1) ("Garcia").

While Vijayendran teaches the addition of crosslinking agents, the combined references fail to teach using polyaziridines.

Garcia teaches that polyaziridines are conventionally used in crosslinking polyurethane/polyvinyl hybrid polymers. See Examples 1-4 and Table 1.

It is prima facie obvious to substitute equivalents for same purposes so long as the equivalency is recognized in the prior arts. See MPEP § 2144.06.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the composition of the combined references by substituting the crosslinking agents there with another conventionally used crosslinking agent polyaziridines, as suggested by Garcia, because of the expectation of successfully producing a composition of similar effects.

(10) Response to Argument

A. The combination of Mitchell and Vijayendran is proper, and would have would have motivated a skilled artisan to make the claimed invention.

Applicants argue that the combination of Mitchell and Vijayendran is not proper. Applicants specifically argue that the permeable property of a membrane wall made with the polyurethane-vinyl polymer dispersion and its "universal utility" in a capsule having controlled release properties.

In response to applicants' argument that Mitchell teaches away from a using sticky/non-film former vinyl polymer, examiner notes that the Vijayendran polymer is a specific vinyl/polyurethane hybrid polymer for film forming properties.

Furthermore, applicants argue that the coating materials that are suitable for the Mitchell invention are limited to those that are "conventionally known in the art" at the time the Mitchell invention was made. The factual inquiries set forth in Graham v. John

Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are made from the level or ordinary skill in the pertinent art ***at the time the present invention was made***. Whether the Vijayendran was known to Mitchell at the time of the Mitchell invention is not a relevant factor here.

Examiner respectfully disagrees with applicants' argument that "the Vijayendran material does not protect the substrate from anything". The function of a coating material is inherently and essentially to protect the substrate from the environment. Vijayendran teaches that the vinyl/polyurethane hybrid polymer is chosen because it is a good balance of protection and flexibility. Examiner respectfully notes that the Mitchell reference teaches that permeability occurs even by transportation of water vapor through the membrane. See Mitchell, col. 5, lines 36-62. Mitchell also teaches that a polymeric coating material having good moisture barrier function is desirable for constant controlled release of the core material in a capsule because *such polymer greatly reduces the rate of dissolution of the active material*. See col. 5, line 63 – col. 6, line 2. It follows that the polymers with good moisture barrier function are useful for permeable coating. Examiner takes the position that the collective teaching of Mitchell and Vijayendran provide the expectation that the Vijayendran vinyl/polyurethane polymer would be suitable as the coating material of the instant invention or the Mitchell invention, which provide the sufficient moisture barrier to provide both protection of the core material against the aqueous environment and the permeability which is necessary to achieve the constant controlled release.

B. Claims are properly rejected over Mitchell and Vijayendran, and further in view of Wallace.

While applicants assert that Wallace fails to teach the claimed invention, it is noted that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, the Wallace reference was cited to show that adding an anticoalescent agent to the wall membrane of an encapsulated material as applicants have done is well known and renders specific benefits, which include the uniformity of the thickness of the membrane and reducing the amount of the membrane needed, reducing the time to form the membrane and agglomeration of the membrane material.

Applicants also argue that Walles reference fails to teach the "greater than submicron" particle size of the second material. Examiner notes that applicants' claim limitation reads on a second material having a particle size from ***about 1 to about 15 microns***. Given the broadest interpretation of the claims, ***about 1 micron*** reads on submicron.

C. Claims are properly rejected over Mitchell, Vijayendran and Walles, and further in view of Garcia.

Applicants also argue that the combined references fail to teach or suggest that the urethane/vinyl hybrid polymer can or should be crosslinked. Examiner respectfully disagrees, as Vijayendran teaches using crosslinking agent to retain urethane properties in col. 10, lines 58 – 69. Applicants also argue that this specific teaching in

the reference refers to "the manufacture of the urethane/vinyl hybrid polymer itself" and not "crosslinking the finished hybrid". The argument is not commensurate with the scope of the claim. The claimed invention is not a process making of the urethane/vinyl hybrid polymer or an improvement thereon. The claimed invention of claims 19, 22, 24-28, and 30 further limits that the urethane/vinyl hybrid polymer, first material of the claimed article, is a crosslinked polymer with a specific crosslinker. The Vijayendran teaches that the urethane/vinyl hybrid polymer is a crosslinked product. Making the hybrid polymer with another type of crosslinker such as polyaziridine as taught by Garcia, would have been an obvious modification to one of ordinary skill in the art.

Applicants argue that applicants' film is made by a different technique from the method known in the prior art, and further argues that applicants' technique produces "a coating which obviously resists diffusion", wherein the prior art method produces a film which resist diffusion. Examiner finds the argument unpersuasive because applicants are using the same polymer in Vijayendran as the film-forming polymer to coat a substrate. There is no practical difference between "film" and "coating". Applicants assert that the coating in Vijayendran is applied by "conventional flexographic or gravure methods", while the present invention is a "film" made by a fluidized bed process. However, the instant claims on appeal is not directed to a method of forming a film but an article having "an enclosing membrane wall". How the membrane wall is manufactured is not a claimed limitation nor does it render patentability in this case.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,
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